

[0099] A “high efficiency recovery condition” is a condition at which it is predicted that the efficiency of recovery of CO₂ will become equal to or greater than a preset predetermined efficiency. Here, in order to operate the CO₂ recovery device 20, relatively large electric power is consumed at the battery 50. For this reason, operation of the CO₂ recovery device 20 in a state where a relatively large amount of CO₂ recovery is anticipated in the CO₂ recovery device 20 is preferable from the viewpoint of improving the balance of the amount of CO₂ recovery with respect to the electric power consumed. A “high efficiency recovery condition” means a condition at which a relatively large amount of CO₂ recovery with respect to the electric power consumed is anticipated in the CO₂ recovery device 20. Below, specific examples of a high efficiency recovery condition will be explained.

[0100] A first example of the high efficiency recovery condition is prediction that the vehicle 1 will be driven over equal to or greater than a predetermined reference distance. Therefore, for example, if it is predicted that the vehicle 1 will be driven over equal to or greater than a reference distance, it is judged that the high efficiency recovery condition is satisfied, while if it is predicted that the vehicle 1 will not be driven over equal to or greater than a reference distance, it is judged that the high efficiency recovery condition is not satisfied.

[0101] Here, if the cooling part 23 is configured so as to realize a refrigeration cycle, electric power of a certain extent is necessary for starting up the cooling part 23. Therefore, if the vehicle 1 is driven over a short distance less than a certain distance, despite a certain extent of electric power being consumed for starting up the cooling part 23, there is little amount of recovery of CO₂ due to the vehicle 1 being driven. From the above, if the vehicle 1 is driven over a short distance, it is predicted that the efficiency of recovery of CO₂ will become less than a preset predetermined efficiency. That is, in this case, it is considered that the high efficiency recovery condition is not satisfied.

[0102] On the other hand, if the vehicle 1 is driven over a long distance of equal to or greater than a certain set distance, since the driving distance is long, the amount of CO₂ recovery at the CO₂ recovery device 20 is also great. Therefore, even if electric power is consumed for starting up the cooling part 23, the ratio of the amount of electric power consumed along with startup of the amount of recovery of the CO₂ due to the vehicle 1 being driven is small. From the above, in this way, if the vehicle 1 is driven over a short distance, it is predicted that the efficiency of recovery of CO₂ will become equal to or greater than a preset predetermined efficiency. That is, in this case, it is considered that the high efficiency recovery condition is satisfied.

[0103] Specifically, if the predicted driving distance until the destination input to the car navigation system of the vehicle 1 (not shown) is equal to or greater than the reference distance, it is predicted that the vehicle will be driven over a long distance of equal to or greater than a certain set distance. For this reason, in this case, the recovery control part 32 predicts that the efficiency of recovery of CO₂ will become equal to or greater than a predetermined efficiency, and judges that the high efficiency recovery condition is satisfied. On the other hand, if the predicted driving distance until the destination is less than a reference distance, it is predicted that the vehicle will be driven over a short distance of less than a certain set distance. For this

reason, the recovery control part 32 predicts that the efficiency of recovery of CO₂ will not become equal to or greater than a predetermined efficiency, and judges that the high efficiency recovery condition is not satisfied. Note that, the reference distance is, for example, set to a distance at which a greater amount of recovery of CO₂ is anticipated than the amount of generation of CO₂ due to generation of power corresponding to the amount of electric power consumed in the CO₂ recovery device 20 at the internal combustion engine 10 if the vehicle 1 is driven by equal to or greater than the reference distance.

[0104] A second example of the high efficiency recovery condition is that a predetermined reference time has elapsed from startup of the internal combustion engine 10 of the vehicle 1. Therefore, for example, if the reference time has elapsed from startup of the internal combustion engine 10 of the vehicle 1, it is judged that the high efficiency recovery condition is satisfied, while if the reference time has not elapsed from startup of the internal combustion engine 10 of the vehicle 1, it is judged that the high efficiency recovery condition is not satisfied.

[0105] As explained above, if the vehicle is driven over a long distance, the efficiency of recovery of the CO₂ is high, while if the vehicle is driven over a short distance, the efficiency of recovery of the CO₂ is low. Here, the frequency by which the vehicle 1 is driven over a long distance and the frequency by which it is driven over a short distance differ for each user of the vehicle 1. Therefore, for example, in a vehicle 1 with a high frequency of being driven by a user over a long distance, at an early stage after startup of the internal combustion engine 10, it can be judged that the possibility of being driven over a long distance is high. Accordingly, in this case, if a short time elapses after startup of the internal combustion engine 10, it can be predicted that the vehicle 1 will be driven over a long distance and accordingly can be judged that the high efficiency recovery condition is satisfied. On the other hand, if the frequency by which the vehicle 1 is driven over a short distance is high, it is only after the elapse of a time of equal to or greater than the driving time in the frequently performed short distance driving that the possibility of being driven over a long distance becomes higher. Therefore, in this case, if a relatively long time has elapsed after startup of the internal combustion engine 10, it is predicted that the vehicle 1 will be driven over a long distance and accordingly it is judged that the high efficiency recovery condition is satisfied.

[0106] Therefore, in the second example, it is judged whether the high efficiency recovery condition is satisfied based on whether the time elapsed from startup of the internal combustion engine 10 is over a reference time set for each user. At this time, the reference time for judging the high efficiency recovery condition is set based on the past history of the vehicle 1. Specifically, the reference time is, for example, set to a minimum time at which the possibility of the vehicle 1 being driven for a long distance of equal to or greater than a reference distance is equal to or greater than a certain ratio, from the past history. Note that, the reference time may, for example, be set manually by the user or otherwise set by another method.

[0107] A third example of the high efficiency recovery condition is the water temperature of the internal combustion engine 10 of the vehicle 1 being equal to or greater than a predetermined reference temperature. Therefore, for example, if the water temperature of the internal combustion